

CLAIMS

1. An information processor storing a plurality of format engines each for executing data described in a different format,  
5 the information processor comprising:

format engine managing means for pre-defining common states which define operating states of each format engine in a representation common to all the format engines, and managing an operation of each format engine; and

10 operation control means, provided in correspondence with each format engine, for pre-defining a correspondence between the common states and individual states which define the operating states of each format engine in a representation different for each format engine, and controlling operations of the format  
15 engines such that each format engine is in an arbitrary individual state;

wherein:

for changing a format engine to a predetermined common state, the format engine managing means sends a message including common  
20 state information indicating the predetermined common state to the operation control means provided in correspondence with the format engine; and

when the message is sent from the format engine managing means, the operation control means controls the format engine such  
25 that the format engine is in the individual state corresponding

to the common state indicated by the common state information included in the message.

2. An information processor according to claim 1, further comprising table storage means, provided in correspondence with each format engine, for storing a table including sets of an individual state of each format engine and a common state corresponding to the individual state;

wherein the operation control means determines the individual state from the common state by referring to the table.

10 3. An information processor according to claim 1, further comprising individual state obtaining means, provided in correspondence with each format engine, for obtaining an individual state of each format engine and sending common state information indicating the common state corresponding to the obtained  
15 individual state to the format engine managing means;

wherein the format engine managing means manages an operation of each format engine based on the common state indicated by the common state information which is output from the individual state obtaining means.

20 4. An information processor according to claim 3, further comprising a minimum resource which is used by a format engine during execution and cannot be used simultaneously by a plurality of format engines;

wherein:

25 when the individual state obtained from a format engine shows

an operating state using the minimum resource, the individual state obtaining means outputs common state information indicating a predetermined state to the format engine managing means as the common state information of the format engine; and when the  
5 individual state obtained from a format engine show an operating state not using the minimum resource, the individual state obtaining means outputs common state information indicating a state other than the predetermined state to the format engine managing means as the common state information of the format engine; and  
10 the format engine managing means manages the operation of each format engine such that the common state information of only one format engine indicates the predetermined state.

5. An information processor according to claim 4, wherein:  
the format engine managing means comprises:  
15 activation receiving means for receiving an activation request for activating a format engine;  
common state obtaining means for obtaining common state information of each format engine from the state obtaining means in response to the activation receiving means receiving the  
20 activation request;  
operation stopping means for, when the common state information of a format engine obtained by the common state obtaining means indicates a during-execution state, sending a message for stopping the operation of the format engine to the  
25 operation control means provided in correspondence with the format

engine; and

activation means for, after the operation of the format engine is stopped by the operation stopping means, sending a message for activating a format engine corresponding to the activation request to the operation control means provided in correspondence with the format engine.

6. An information processor according to claim 1, further comprising:

a minimum resource which is used by a format engine during execution and cannot be used simultaneously by a plurality of format engines;

resource control means for permitting a format engine to use the resource in response to a request from a format engine;

priority level information storing means for storing priority level information indicating a relative priority level of each format engine regarding use of the minimum resource; and

permission determination means for, when there are overlapping requests to use the minimum resource from a plurality of format engines, determining a format engine which is to be permitted to use the minimum resource based on the priority level information;

wherein when there are overlapping requests to use the minimum resource from a plurality of format engines, the resource control means permits only the format engine determined by the permission determination means to use the minimum resource; and

when there are no overlapping requests to use the minimum resource from a plurality of format engines, the resource control means permits the format engine, which made the request, to use the minimum resource.

5       7. An information processor according to claim 6, wherein:  
          a plurality of the minimum resources are provided; and  
          a plurality of resource control means are provided in correspondence with the plurality of the minimum resources.

10      8. A program executable by a computer of an information processor storing format engines each for executing data described in a different format, wherein the program causes the computer to function as:

15      format engine managing means for pre-defining common states which define operating states of each format engine in a representation common to all the format engines, and managing an operation of each format engine; and

20      operation control means, provided in correspondence with each format engine, for pre-defining a correspondence between the common states and individual states which define the operating states of each format engine in a representation different for each format engine, and controlling operations of the format engines such that each format engine is in an arbitrary individual state;

wherein:

25      for changing a format engine to a predetermined common state,

the format engine managing means sends a message including common state information indicating the predetermined common state to the operation control means provided in correspondence with the format engine; and

- 5       when the message is sent from the format engine managing means, the operation control means controls the format engine such that the format engine is in the individual state corresponding to the common state indicated by the common state information included in the message.

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